

In the Claims:

I claim:

Claim 1 (Canceled).

Claim 2 (Currently amended). A plant containing one or more of the following novel restriction fragments identified by one or more molecular marker-enzyme combinations [[in claim 1]] thereof  
II,II;

BNL5.62, *Eco*RI, 10.3 kb; np197, *Hind*III, 3.9 kb; UMC157, *Eco*RI, 6.5 kb and 3.3 kb; UMC157, *Hind*III, 5.5 kb; UMC157, *Bam*HI, 14.0 kb, 8.5 kb and 4.5 kb; UMC11, *Bam*HI, 7.0 kb; CSU3, *Bam*HI, 10.0 kb and 7.6 kb; UMC67, *Eco*RI, 19.2 kb; UMC67, *Bam*HI 13.4 kb, 11.0 kb and 1.6 kb; CSU92, *Bam*HI, 13.3 kb and 7.5 kb; asg62, *Bam*HI, 12.7 kb, 9.7 kb and 6.6 kb; UMC58, *Hind*III, 3.3 kb; CSU164, *Eco*RI, 9.0 kb and 7.0 kb; UMC128, *Hind*III, 6.0 kb; UMC107, *Eco*RI, 7.5.0 kb, 6.3 kb and 6.1 kb; UMC140, *Eco*RI, 4.9 kb; UMC140, *Hind*III, 6.5 kb; adh1, *Hind*III, 9.4 kb; adh1, *Bam*HI, 9.4 kb; UMC161, *Hind*III, 3.3 kb; BNL8.29, *Hind*III, 9.3 kb and 8.3 kb; UMC53, *Eco*RI, 9.4 kb; UMC53, *Eco*RV, 8.4 kb, 3.8 kb and 3.0 kb; UMC6, *Eco*RI, 3.8 kb; UMC6, *Hind*III 9.4 kb; UMC6, *Bam*HI, 13.2 kb, 12.7 kb, and 7.0 kb; UMC61, *Hind*III, 3.4 and 2.8 kb *agrr1*67, *Bam*HI, 5.7 kb, 4.5 kb and 4.0 kb; UMC34, *Eco*RI, 7.5 kb and 5.4 kb; UMC34, *Hind*III, 8.8 kb, 6.5 kb and 5.8 kb; UMC34, *Bam*HI, 9.4 kb; UMC135, *Hind*III, 11.6 kb and 10.8 kb; UMC131, *Eco*RI, 10.6 kb, 5.8 kb and 4.3 kb; UMC55, *Eco*RI, 3.9 kb; UMC55, *Hind*III, 4.3 kb; UMC5, *Eco*RI, 5.4 kb; UMC5, *Hind*III, 6.5 kb; UMC49, *Bam*HI, 8.2 kb; UMC36, *Bam*HI, 4.2 kb; UMC32, *Eco*RI, 5.3 kb; UMC32, *Hind*III 6.7 kb, 6.0 kb, and 2.8 kb; asg24, *Hind*III, 7.2 kb and 6.4 kb; UMC121, *Eco*RI, 3.7 kb and 3.2 kb; BNL8.35, *Hind*III, 9.9 kb and 8.7 kb; UMC50, *Bam*HI, 7.8 kb, 6.8 kb, 5.8 kb and 3.8 kb; UMC42, *Hind*III, 10.4 kb, 9.2 kb, 8.9 kb, 7.9 kb, 7.6 kb, and 3.7 kb; np1247, *Eco*RI, 8.0 kb; np1247, *Hind*III 3.0 kb; UMC10, *Hind*III, 3.0 kb; UMC10, *Eco*RI, 6.5 kb and 5.5 kb; UMC102, *Eco*RI, 2.7 kb; BNL6.06, *Eco*RI, 6.8 kb; CSU240, *Eco*RI, 10.6 kb, 4.5 kb and 3.3 kb; BNL5.37, *Hind*III, 10.3 kb, 5.8 kb and 3.5 kb; np1296, *Eco*RI, 7.9 kb; UMC3, *Eco*RI 2.5 kb and 2.0 kb; np1212, *Hind*III, 4.3 kb; np1212, *Bam*HI, 5.4 kb; UMC39, *Eco*RI, 12.2 kb, 9.2 kb, 7.8 kb and 7.1 kb; *phi10080*, *Bam*HI, 9.7 kb; UMC63, *Hind*III, 9.5 kb and 4.3 kb; CSU303, *Eco*RI, 10.0 kb; UMC96, *Hind*III, 11.8 kb, 6.4 kb and 5.5 kb; UMC96, *Bam*HI, 7.5 kb; UMC2, *Eco*RI, 11.8 kb, 10.4 kb, 8.0 kb and 3.9 kb; CSU25,

HindIII, 5.2 kb, 4.5 and 4.2 kb; agr115, EcoRI, 8.0 kb and 5.4 kb; agr115, BamHI, 5.4 kb and 3.5 kb; phi20725, EcoRI, 10.3 kb, 9.7 kb and 7.2 kb; phi20725, HindIII, 1.5 kb; UMC31, EcoRI, 5.8 kb and 2.0 kb; UMC31, BamHI 6.5 kb; UMC55, EcoRI, 3.9 kb; UMC55, HindIII, 4.3 kb; CSU235, HindIII, 6.8 kb and 3.0 kb; CSU585, HindIII, 8.3 kb and 6.1 kb; BNL5.46, HindIII, 13.7 kb, 10.5 kb, 9.7 kb and 5.1 kb; agr321, BamHI, 5.5 kb; agr89, HindIII, 7.1 kb; np1386, HindIII, 12.6 kb, 9.3 kb and 8.2 kb; UMC42, HindIII, 19.2 kb, 10.3 kb 8.9 kb, 7.6 kb, 3.7 kb and 3.0 kb; tda62, BamHI, 5.5 kb, 5.2 kb, 4.8 kb and 4.2 kb; BNL5.71, EcoRV, 11.3 kb, 6.8 kb, and 5.7 kb; UMC156, HindIII, 3.0 kb; UMC66, EcoRI, 10.5 kb; UMC66, BamHI, 3.7 kb and 2.4 kb; UMC19, BamHI, 12.3 kb; UMC104, HindIII, 12.4 kb, 11.6 kb and 7.5 kb; UMC104, BamHI, 9.4 kb; UMC133, HindIII, 10.6 kb, 9.9 kb, 9.2 kb and 7.7 kb; UMC52, BamHI, 8.7 kb, 6.9 kb, 3.8 kb, 3.0 kb and 2.0 kb; BNL15.07, HindIII, 2.9 kb and 2.7 kb; np1409, EcoRI, 9.4 kb; np1409, HindIII, 10.4 kb, 9.0 kb and 3.9 kb; UMC147, HindIII, 16.3 kb, 3.8 kb and 2.4 kb; asg73, EcoRI, 3.8 kb; UMC90, HindIII, 7.7 kb, 6.5 kb, 2.8 kb and 1.6 kb; UMC90, BamHI, 9.0 kb; UMC72, 8.5 kb; UMC27, HindIII, 8.3 kb and 4.5 kb; UMC27, BamHI, 6.5 kb; UMC43, BamHI, 9.7 kb, 7.3 kb and 5.7 kb; tda37, BamHI, 9.0 kb, 8.0 kb and 6.4 kb; UMC43, BamHI, 9.7 kb, 7.3 kb and 5.7 kb; UMC40, BamHI, 7.2 kb, 4.7 kb and 4.3 kb; BNL7.71, HindIII, 10.6 kb; BNL5.71, BamHI, 11.3 kb, 6.8 kb and 5.7 kb; tda62, BamHI, 6.5 kb and 5.5 kb; UMC68, HindIII, 6.0 kb; UMC104, HindIII, 12.4 kb, 11.6 kb and 7.5 kb; UMC104, BamHI, 9.4 kb; phi10017, BamHI, 15.1 kb and 9.5 kb; tda50, BamHI, 8.5 kb; np1373, HindIII, 6.5 kb, 5.6 kb, 5.1 kb and 3.0 kb; tda204, BamHI, 4.0 kb; np1393, EcoRI, 12.1 kb, 8.5 kb, 7.0 kb and 5.6 kb; UMC65, HindIII, 2.9 kb; UMC46, EcoRI, 6.5 kb and 5.6 kb; asg7, HindIII, 6.3 kb; UMC28, HindIII, 15.8 kb and 11.9 kb; UMC28, BamHI, 9.9 kb, 7.6 kb and 6.6 kb; UMC134, HindIII, 7.5 kb and 4.7 kb; asg8, HindIII, 10.8 kb, 8.7 kb and 8.4 kb; phi20581, HindIII, 4.2 kb; O2, EcoRI, 9.4 kb; asg34, HindIII, 4.5 kb; BNL15.40, HindIII, 5.8 kb; UMC116, EcoRI, 9.5 kb; UMC110, BamHI, 10.6 kb, 4.9 kb and 3.9 kb; BNL8.32, HindIII, 8.9 kb, 7.4 kb and 7.1 kb; BNL14.07, EcoRI, 6.4 kb; UMC80, HindIII, 10.7 kb, 8.2 kb and 2.4 kb; BNL16.06, EcoRI, 6.8 kb and 1.9 kb; BNL16.06, HindIII, 5.7 kb, 3.0 kb and 1.6 kb; phi20020, HindIII, 7.8 kb, 6.6 kb and 5.1 kb; np1114, HindIII, 10.0 kb, 8.8 kb and 6.3 kb; BNL9.11, HindIII, 3.4 kb; UMC103, HindIII, 6.9 kb; UMC124, HindIII, 8.0 and 7.0; UMC124, BamHI, 6.6 kb, 2.6 kb and 1.6 kb; UMC120, HindIII, 3.2 kb, 2.3 kb and 1.4 kb; UMC89, EcoRI, 7.3 kb; UMC89, HindIII, 7.3 kb; UMC89, BamHI, 9.5 kb, 6.0 kb, 5.2 kb and 4.5 kb; UMC89, MspI, 6.7 kb and 5.8 kb; BNL12.30, EcoRI, 3.5 kb; UMC48, HindIII, 6.2 kb, 5.3 kb, 4.7 kb, 4.2 kb and 3.5 kb; UMC53, EcoRI, 3.8 kb and 3.0 kb; UMC53, EcoRV, 8.4 kb; np1268, BamHI,

6.4 kb; UMC7, BamHI, 4.2 kb; UMC3, EcoRI, 3.5 kb and 2.0 kb; phi10005, EcoRI, 15.0 kb and 1.6 kb; UMC113, EcoRI, 5.9 kb and 5.4 kb; UMC113, BamHI, 12.8 kb, 11.8 kb and 10.5 kb; UMC192, HindIII, 11.4 kb and 6.4 kb; wx (waxy), HindIII, 21.0 kb; UMC105, EcoRI, 3.9 kb; CSU147, HindIII 5.9 kb; BNL5.10, HindIII, 6.1 kb and 4.4 kb; UMC114, BamHI, 12.6 kb, 11.5 kb, 10.0 kb, 8.8 kb, 7.5 kb and 6.5 kb; UMC95, EcoRI, 5.6 kb; UMC95, HindIII, 7.7 kb, 7.3 kb, 4.8 kb, 4.5 kb, 4.1 kb and 1.7 kb; UMC95, BamHI, 15.0 kb and 9.0 kb; asg44, EcoRI, 5.3 kb; CSU61, EcoRI, 8.1 kb and 4.8 kb; BNL7.57, BamHI, 11.6 kb and 5.9 kb; CSU54, EcoRI, 14.7 kb and 12.6 kb; phi20075, EcoRI, 7.1 kb; np1285, EcoRI, 12.4 kb, 9.4 kb and 6.0 kb; KSU5, EcoRI, 9.8 kb, 7.6 kb, 6.1 kb, 3.8 kb and 3.5 kb; UMC130, EcoRI, 13.5 kb and 7.0 kb; UMC130, HindIII, 4.8 kb and 3.2 kb; UMC130, BamHI, 3.2 kb; UMC64, HindIII, 3.3 kb; UMC152, HindIII, 12.4 kb, 7.1 kb and 5.6 kb; phi06005, EcoRI, 12.8 kb; UMC163, HindIII, 7.0 kb, 4.8 kb, 3.0 kb, 2.6 kb and 2.3 kb; UMC44, HindIII, 9.8 kb, 8.7 kb, 7.2 kb, 5.5 kb and 4.0 kb; BNL10.13, HindIII, 10.8 kb; np1306, HindIII, 7.0 kb; pmt1, HindIII, 2.3 kb; pmt2, HindIII, 2.8 kb and 2.1 kb; pmt5, HindIII, 12.3 kb, 8.1 kb, 3.6 kb, 3.2 kb and 2.5 kb; tda48, HindIII, 8.2 kb; tda53, HindIII, 3.8 kb and 2.2 kb; tda168, EcoRI, 3.6 kb; tda16, HindIII, 4.3 kb; and tda17, HindIII, 7.0 kb; tda250, BamHI, 4.0 kb, produced from a procedure comprising the steps of:

- (a) crossing a *Tripsacum* female parent with a teosinte male parent to produce (*Tripsacum* X teosinte) hybrid seed or a teosinte female parent with a *Tripsacum* pollen donor to produce (teosinte X *Tripsacum*) hybrid seed; then
- (b) growing a (*Tripsacum* X teosinte) or (teosinte X *Tripsacum*) hybrid plant from said seed to maturity; then
- (c) harvesting the seed produced in (c).

Claim 3 (Twice amended). Seed from [a] the plant [in claim 2] that contains one or more restriction fragments [produced in accordance with the method described in claim 1] set forth in claim 2.

Claim 4 (Twice amended). All hybrid plants, derivatives, variants, mutants, modifications, and cellular and molecular components [that contain one or more restriction fragments set forth in claim [1]] 2 thereof, obtained] from a plant [as set forth in] according to claim [1] 2 or [grown from the seed according to] claim 3.

Claim 5 (Twice amended). Pollen produced by a plant according to claim ||s|| 2 or claim 4, ||that contains one or more restriction fragments described in claim ||1|| 2.||

Claim 6 (Twice amended). A tissue culture, all derivatives, variants, mutants, modifications, and cellular and molecular components from a plant according to claim 4, ||that contain one or more restriction fragments described in claim ||1|| 2.||

Claim 7 (Canceled).

Claim 8 (Currently amended). A plant wherein said plant is a maize plant that contains one or more restriction fragments described in claim ||1|| 2 thereof, and is produced from a procedure comprising the steps of:

- (a) crossing a *Tripsacum* female parent with a teosinte male parent to produce (*Tripsacum* X teosinte) hybrid seed or a teosinte female parent with a *Tripsacum* pollen donor to produce (teosinte X *Tripsacum*) hybrid seed; then
- (b) growing a (*Tripsacum* X teosinte) or (teosinte X *Tripsacum*) hybrid plant from said seed to maturity; then
- (c) crossing said seed from (*Tripsacum* X teosinte) or (teosinte X *Tripsacum*) hybrid plant with maize to produce seed;
- (d) harvesting the seed produced in (c).

Claim 9 (Twice amended). Maize seed ||that contains one or more restriction fragments described in claim ||1|| 2 thereof, produced|| from a plant ||in|| according to claim 8.

Claim 10 (Twice amended). Maize plants, all derivatives, subsequent generations, variants, mutants, modifications, and cellular and molecular components ||that contain one or more restriction fragments described in claim ||1|| 2 thereof, grown|| from ||said|| the seed according to claim 9.

Claim 11 (Twice amended). Pollen ||that contains one or more restriction fragments described in claim ||1|| 2 thereof, produced by|| from a plant according to claim 8 or claim 10.

Claim 12 (Twice amended). Tissue cultures, all derivatives, variants, mutants, modifications, and cellular and molecular components ||that contain one or more restriction fragments described in claim ||1|| 2 thereof, derived|| from ||said hybrid|| a ||maize|| plant||s|| according to claim 8 or claim 10.

Claim 13 (Twice amended). A plant ||wherein said plant is a maize plant ||that contains one or more restriction fragments described in claim 2 thereof,|| produced from a procedure described in|| according to claim 8 or claim 10, ||that is distinguished by the presence of|| in which said plant has root aerenchyma.

Claim 14 (Twice amended). A plant ||wherein said plant is a maize plant ||that contains one or more restriction fragments described in claim 2 thereof,|| produced from a procedure described in|| according to claim 8 or claim 10, ||that is distinguished by tolerance to|| in which said plant is corn rootworm tolerant.

Claim 15 (Twice amended). A plant ||wherein said plant is a maize plant ||that contains one or more restriction fragments described in claim 2 thereof,|| produced from a procedure described in|| according to claim 8 or claim 10, ||that is distinguished by|| in which said plant is ||tolerance to|| drought tolerant.

Claim 16 (Twice amended). A plant ||wherein said plant is a maize plant ||that contains one or more restriction fragments described in claim 2 thereof,|| produced from a procedure described in|| according to claim 8 or claim 10, ||that is distinguished by|| in which said plant has improved grain quality.

Claim 17 (Twice amended). A plant [[wherein said plant is a maize plant [[that contains one or more restriction fragments described in claim 2 thereof,]] produced from a procedure described in]] according to claim 8 or claim 10, [[that]] in which said plant is [[distinguished by]] tolerant[[ce]] to acid soils.

Claim 18 (New). A plant according to claim 8 or claim 10 in which said plant is resistant to aflatoxin.

Claim 19 (New). A plant according to claim 8 or claim 10 in which said plant is resistant to corn borer.

Claim 20 (New). A plant according to claim 8 or 10, further comprising a novel band identified by the SSR probe bnlg1805 thereof,  
in which the roots of said plant have aerenchyma.

Claim 21 (New). A plant according to claim 8 or 10, further comprising one or more novel bands identified by SSR probes dupSSR23, phi123, bnlg2235 or bnlg1714 thereof,  
in which said plant has tolerance to corn rootworm.

Claim 22 (New). A plant according to claim 8 or claim 10, in which said plant has tolerance to low nitrogen.

### **Nonstatutory Double Patenting**

The Examiner has rejected the claims 2-6, 8-12 and 14 as obviousness-type double patenting based on claims 1-9 and 11 of Eubanks US Patent No. 5,750,828, 1998, in which claim 1 describes a method of crossing a *Tripsacum dactyloides* plant and a *Zea diploperennis* plant